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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,660	12/01/2004	Kesafumi Matsumoto	F-8374	8780
28107 7590 07/30/2007 JORDAN AND HAMBURG LLP 122 EAST 42ND STREET SUITE 4000 NEW YORK, NY 10168			EXAMINER AMRANY, ADI	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 07/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/516,660	Applicant(s) MATSUMOTO, KESAFUMI	
	Examiner Adi Amrany	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 7-12, 15, 17, 22-24, 26-29, 31-36, 39 and 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 13, 14, 16, 18-21, 25, 30, 37, 38, 40 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/1/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the restriction requirement in the reply filed on June 21, 2007 is acknowledged. The traversal is on the ground(s) that the restriction would add a burden on the applicant and the Office through the filing of divisional applications. This is not found persuasive because the claimed inventions are distinct and would place a search burden on the Examiner. The composition of the resistor is not critical to the resistor's placement in the load system. The Invention B resistor can be used in any electrical system. Similarly, Invention C cooling system can be used in any system that requires heat dissipation. Each of the claimed inventions may be used together, but it is not necessary to the function of either invention that they be combined. Inventions A, B and C are distinct inventions (MPEP §802.0 -802.02). They are related because they can be used together, but they are distinct because the patentability of one Invention does not depend on any of the other two.

Combining Inventions B and C with Invention A places a serious burden on the Examiner because Inventions B and C comprise elements not normally associated with class 307. The burden includes, inter alia, searching for prior art outside the scope of that traditionally filed within the Examiner's art unit. Examiners in other classes (class 338 for Invention B; class 165 for Invention C) are more experienced in their respective fields and can, with greater ease, properly examine the restricted claims.

Since both requirements for restriction have been met by the Examiner (see MPEP §803), the requirement is still deemed proper and is therefore made FINAL.

Upon further review of the claims, claims 15 and 17 depend from non-elected claims 11 and 12, respectively, and claims 39 and 41 depend from non-elected claims 35 and 37, respectively. Therefore, these claims will be grouped with Invention B and will not be examined.

Drawings

2. Figures 15-25 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Figures 15-25 are discussed in the Background Art section of the specification, which is reserved for a disclosure of the established prior art. Further, the disclosure of figure 15 explicitly states that it is prior art (pg 1, lines 31-33; pg 23, lines 12-13).

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the connection between the resistors and the switches must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Figure 5 shows configuration banks connected to the three-phase power supply. Figure 5, however, does not show the placement of the resistors in relationship to the banks. Figure 5 only contains numbered nodes and either a dashed or solid band encompassing node-pairs. The specification does not disclose how the resistors are placed within the structure of figure 5. Figure 6 shows the connection between the low- and high-voltage banks and the switches, but does not show the relationship between the connection points of figure 5 and the output of the switches of figure 6. Similarly, figure 7 fails to show the relationship between the resistor circuits and the switches.

It is requested that applicant furnish a drawing showing the completed structure of at least claim 1 (lines 3-20), showing the low-voltage bank parallel to the high-voltage bank, each bank comprised of a plurality of lower-capacity configuration banks for a low-voltage (or high-voltage) resistor circuit.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because page 27 (lines 21-30) refer to a parallel connection between the resistors and switches. Figure 6, however, shows that each of

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the resistors are in series with a switch, and that the resistor/switch units are then placed in parallel with the generator.

Appropriate correction is required.

Claim Objections

5. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 1 previously recited the limitation that the high-voltage three-phase resistor circuit is comprised of resistor arrays comprised of resistor elements connected in series in a form of a Y- or Delta-connection (lines 13-20).

6. Claim 1 is objected to because of the following informalities:

a. Lines 4-5 and 7-9; the phrase, "configuration banks for a low- (high-) voltage resistor circuit," is unclear because it appears that a plurality of configuration banks are provided for one voltage resistor circuit.

b. Lines 6, 10; there is no basis for the limitation that the resistors circuits are connected in parallel to each of the switches. Figure 6 shows that the resistors are in series with each switch, and that each resistor/switch unit is in parallel to the generator.

c. Line 7, there is no input terminal connection for the transformer.

d. Line 16, "phase" should be pluralized.

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- e. Line 17; the phrase "unconnected commonly" is unclear and confusing. If the independent neutral points of each resistor array are unconnected to each other, it is unclear how this isolation can be "common"?
 - f. Line 18; the phrase, "each of terminals of said resistor arrays," should be rewritten, "each terminal of said resistor arrays."
 - g. Line 26; the limitation of "various supporters" is indefinite.
7. Claims 13-14 are objected to because the phrase, "resistor circuits as Y- (Δ -) connection" appears to be in error. It appears "as" should be replaced with "that is."
8. Multiple dependent claims 5-6, 13-14, 19-21 and 25 are objected to because they depend upon withdrawn claims 2 and 3. Multiple dependent claims 37-42 are objected to because they depend upon withdrawn claims 31 and 32.
- Appropriate correction is required. Applicant is requested to review the claims for consistent grammar and proper spelling.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 5-6, 13-14, 16, 18-21, 25, 30, 37-38, 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (EP 1,156,342), which is the European Patent Application of the WO reference cited in applicant's Information Disclosure Statement.

With respect to claim 1, Kondo discloses a dry-type high-voltage load system apparatus (par 33) having a high-voltage load system circuit comprising:

a low-voltage bank (fig 24, item SWai; par 67) comprised of a plurality of lower-capacity configuration banks (items SWai1-SWai8) for a low voltage resistor circuit, each comprised of a plurality of low-voltage three-phase resistor circuits (fig 14, items Ri, Si, Ti; par 63) connected in *parallel* to each of a plurality of switches (fig 24, items S1-S8), connected in parallel to an output terminal of a transformer (coil 80; par 22, 77); and

a high-voltage bank (fig 24, item SWbi) comprised of a plurality of lower-capacity configuration banks for a high-voltage resistor circuit each comprised of a plurality of high-voltage three-phase resistor circuits connected in *parallel* to each of a plurality of switches;

said low-voltage bank and said high-voltage bank being connected in parallel (fig 24; par 67) to a high-voltage power generator (item 96) through a central breaker (item 97), characterized by comprising:

said low-voltage three-phase resistor circuit and said high-voltage three-phase resistor circuit each being comprised of resistor arrays in three phases (fig 14; par 63), each of said resistor arrays being comprised of resistor elements connected in series, in a form of a Y-connection in which three resistor arrays are concentrated for reconciliation of their phases so that an isolated and independent neutral point unconnected commonly to those of the other three-phase resistor circuits is formed, or in a form of a Δ -connection in which each of

terminals of said resistor arrays in three phases is connected to each of in-phase branch distribution lines of a power cable (fig 27, 33; par 107);

each of said resistor elements (figs 9-9B; par 42-46) comprising a cylindrical outer tube (59), a resistive heat-generating wire (63), an insulating material (item 64), and high-voltage proof insulating sleeves (item 66).

Kondo does not expressly disclose that the plurality of switches of the low-voltage bank is connected in parallel to the output terminal of a transformer. Kondo does disclose that the switches are connected to coils (80). One skilled in the art would recognize that coils contain the same magnetic properties as the output windings of a transformer, since both are constructed of a wound conductor. Further, it would be obvious to one skilled in the art to join the separate coils into one, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

With respect to claim 5, the resistor arrays are in the form of the Y- or Δ -connection, as discussed above in the rejection of claim 1.

With respect to claim 6, it would be obvious to one skilled in the art to configure the low-voltage resistor circuit in a Δ -connection, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Y- and Δ -connections are the most common three-phase connection configurations, and it would be obvious to one

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skilled in the art to place any combination of the two connections into the high- and low-voltage resistor circuits to achieve the optimum result.

With respect to claims 13-14, Kondo discloses sixteen resistor elements in a Y-connection (fig 27; par 76) and that the high-voltage circuit is designed to carry 6,600 V (par 88). It would be obvious to one skilled in the art to configure the Kondo resistor array (fig 27) with either ten or sixteen resistor elements in a Y- or Δ -connection since discovering an optimum value of a result effective variable involves only routine skill in the art. *Id.*

With respect to claims 16 and 18, it would be obvious to one skill in the art to configure the Kondo resistor circuits with a capacity of around 50.1kW or 83.52kW, since discovering an optimum value of a result effective variable involves only routine skill in the art. *Id.*

With respect to claims 19-21, it would be obvious to one skilled in the art to configure the Kondo configuration banks for each of the recited capacities, since discovering an optimum value of a result effective variable involves only routine skill in the art. *Id.* Further, it would be obvious to one skilled in the art to provide a plurality of lower-capacity configuration banks, since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8 (CCPA 1977).

With respect to claim 25, Kondo discloses the apparatus is designed to test a load (abstract). Kondo disclose that the generator provides voltage and current to the resistor elements (par 78-79). First, it is inherent that a wattmeter is simply a

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combination of a voltmeter and an ammeter ($P = V * I$). Second, since Kondo discloses providing specific voltage and current values to the resistor elements and that the electric conduction control circuit (84) can detect when it is necessary to engage the cooling fan (50), it would be obvious to one skilled in the art that the Kondo apparatus includes a voltmeter and an ammeter.

With respect to claim 30, Kondo discloses the apparatus necessary to complete the recited method, as discussed above in the rejection of claim 1. The extra method step of preventing the arc discharge is interpreted as an inherent result of the configuration disclosed in claim 30. Support for this interpretation is found in the specification (page 30, line 30 to page 31, line 4). Applicant discloses that the configuration of resistor elements suppresses arc discharges and chain breaking. Since resistors are passive devices, and are not active, the suppression is an inherent result of the circuit configuration.

With respect to claims 37-38, 40 and 42, Kondo discloses the apparatus necessary to complete the recited limitations, as discussed above in the rejections of claims 13-14, 16 and 18, respectively.

Conclusion

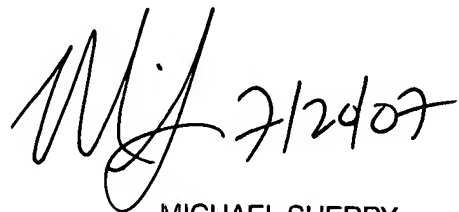
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is requested to review the cited references in their entirety. See also: Kondo (US 5,281,908)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA



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